

MANKIND

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ORIGINAL ARTICLES :

Australia : General.

Enright.

Notes on the Aborigines of the North Coast of N.S.W. By W. J. Enright, B.A.

VIII. THE KUMBANGERAI.

The Kumbangerai formed a large tribe on the north coast of N.S.W. Their *burri* or territory extended from Swan Bay along the southern side of the Clarence to Yugilbar and extended south to the Nambucca River, which was occupied by a small tribe.

John Neville, a Kumbangerai, related to me the following myth :

" The porcupine was a single man who lived by himself in a mountain. A woman who was searching for yams had a child with her in a dilly-bag which she hung on a tree whilst she was continuing with her work. When he saw the baby the porcupine seized her and took her away to his home. When he took her away, by words of enchantment he caused her to develop into a big woman.

" One day, seeing a carpet snake in a pine tree, he told her to climb for it and fell asleep. She kept saying to the pine tree ' Go higher ', and when it got higher she saw her camp and she said ' Bend over '. It bent over and she got off and joined her own people.

" Porcupine went to the camp from which he had taken her and called out ' *Kowingun giungu wang* ', and there was no answer. He went home and collected spears and boomerangs and set out for the camp from which he had taken the woman. He travelled all night, arriving there at daylight, and called out ' *Moonwilla* ' (might be there) ' *Booingindi yunghi gooniga* ' (get up that outside one). The woman on the outside of the sleepers got up and stretched herself. Then he said : ' It is not her '. The outside one got up and he said, ' Stretch out your arm '. When she did so he speared her and jumped behind a tree. He cried out, ' Ooh ', and all the

men got up and commenced throwing spears whilst he kept saying ' *jubbogung* ' (blunt end go in). He had by this time got into a cave, and as they threw in the blunt ends of the spears he put forward an eel which he had carried into the cave and the spears were caught in it. The men said, ' We have got him, he is dead '.

" They cried out, ' *Narriburri mugu* ' (turn him into a porcupine) and went away.

IX. INITIATION RITES, ETC.

J.N., a Kumbangerai, and A.M., a Worimi, both initiates, told me that their respective fathers were circumcised at initiation. This is the first time I have heard of the practice in eastern Australia. The circumcision was performed with a shell.

Near Bowraville I met a full-blooded aboriginal, a Danghetti tribesman, who claimed that he was 76 years of age. He was an initiate and when I showed him the engraved pieces of wood he recognized the larger two of them. He called them *bantana*. They were shown to candidates at the beginning of initiation. He also informed me that there was a *bantana* made of stone. There was a secret song for each piece of wood, and he stated that there was a secret song for each tree. A.W., a Danghetti, corroborated this last statement, as did also A.M., a Worimi.

S.D. told me of the following Danghetti myths.

One day eight girls went out gathering grubs (Toorgah) but only seven of them returned. The other was never seen again. You can see those who returned as a group of seven stars. That group is also called Toorgah.

One day an iguana, a whipsnake and a hawk had a fight. There were a number of little fires all around and the whipsnake went around and caused all to unite and make one big fire. Notwithstanding that, the fight continued and when it finished the hawk was all black. That is how we have got the black hawk.

A.M. informed me that all the aborigines as far as the Hawkesbury River were members of one tribe.

X. THE WORIMI.

Toorgah, the name of a grub much sought after by the natives, is also the name of a group of seven stars. The big red star, which is called " *Jumbarrin* ", looks after the children.

Fourteen or fifteen years ago, Billy Ridgeway saw a figure of a woman near a deep waterhole close to Salamander Bay. That hole is forty to fifty feet deep. They thought she was a *goingun* (a female spirit) and they decided to go down to burn some fat with a view of attracting her, but when they went down a fortnight later it was found to be absolutely dry. It had never been known to be dry before or since. This is the hole to which women resorted to perform increase ceremonies.

The spirits are supposed to live in a mountain. Arthur Marr, the head man of the Worimi, said that his uncle was one day cutting out a bees' nest and looking down he saw two women, one dark coloured and one light coloured. When he came down they put their arms on him, saying, "You think you are clever, but you must come with us". He was helpless. They took him away to a mountain where there were a number of elderly women and they kept him for a fortnight, feeding him well. They appeared to have plenty of food, including kangaroos, wallabies, etc., but he did not know who caught it. When he was eventually let go he came home and the *karajis* relieved him of the charm.

XI. MATERIAL CULTURE OF KUMBANGERAI.

This differs slightly from that of the Worimi. Like the latter, they had a spear with a straight point but not the fishing spear with four points. They had a spear with three barks of hardwood fastened on. They never used bone or stone for barbs. Fish were speared with either. The Worimi had a barbed spear but it was all in one piece, the barbs being carved out of the end of the spear.

They had a club like the *koopin* of the Worimi which they called "*warrin*" and another called "*goormui*" which had a knob on the end.

They made two kinds of clubs. One had knobs around it and the other was a straight piece of wood round in cross section. They did not possess the mushroom-like club of Port Stephens. Their shields, two in number, were like those of the Worimi.

For fishing they used a net and fish-hooks of bone, but never of shell.

Coolamons for carrying water were made of a knobly piece of bark or palm branches with the ends tied up.

The native hibiscus (*malloo*) gave the material for making twine, out of which the dilly-bags called "*nalgui*" were made.

Canoes were made of bark that would hold three men. They would drive them with a long stick.

Australia : Ethnology.**Mountford.**

Aboriginal Methods of Fishing and Cooking as used on the Southern Coast of Eyre's Peninsula, South Australia. By C. P. Mountford, Honorary Assistant in Ethnology, South Australian Museum.

This short paper records scattered information regarding the methods of fishing and cooking employed by the aborigines of the southern coast of Eyre's Peninsula, South Australia. It has been collected from various informants, and is assembled as a small contribution towards the knowledge of this almost extinct people.

FISH TRAPS OR WEIRS.

Mr. W. G. Morgan of Coultas recently presented a photograph to the South Australian Museum which illustrated a fish trap in Mt. Dutton Bay, Hundred of Lake Wangary. This trap had been shown to Mr. Morgan over fifty years ago by the natives of the Pt. Lincoln district, who, at the same time, explained the method by which the fish were caught in this type of enclosure.

The fish trap, which was called *Kuju* (which seemed to be also the general name for fish), was placed in such a position on the seashore that, when the tide was flowing, the water would enter and fill the enclosure. The fish would either be swept into the trap by the current, or enter when searching for food. When the tide was at its height the natives placed stones across the opening, and at low water collected the fish from the shallow pools inside. The aged aborigine who showed this trap to Mr. Morgan said that it was in continuous use during his lifetime, and that at certain seasons of the year large quantities of fish were obtained from it in this manner.

The methods employed in driving the fish into these enclosures were described by Mr. Morton Morgan (brother of the above) to Mr. P. Stapleton. When the fish were sighted the natives waded into the sea until they were on the outside of the school, and by raising and lowering a branch, held in either hand, imitated the shadow of seagulls on the surface of the water. By this means the men were able to drive the fish in any required direction.

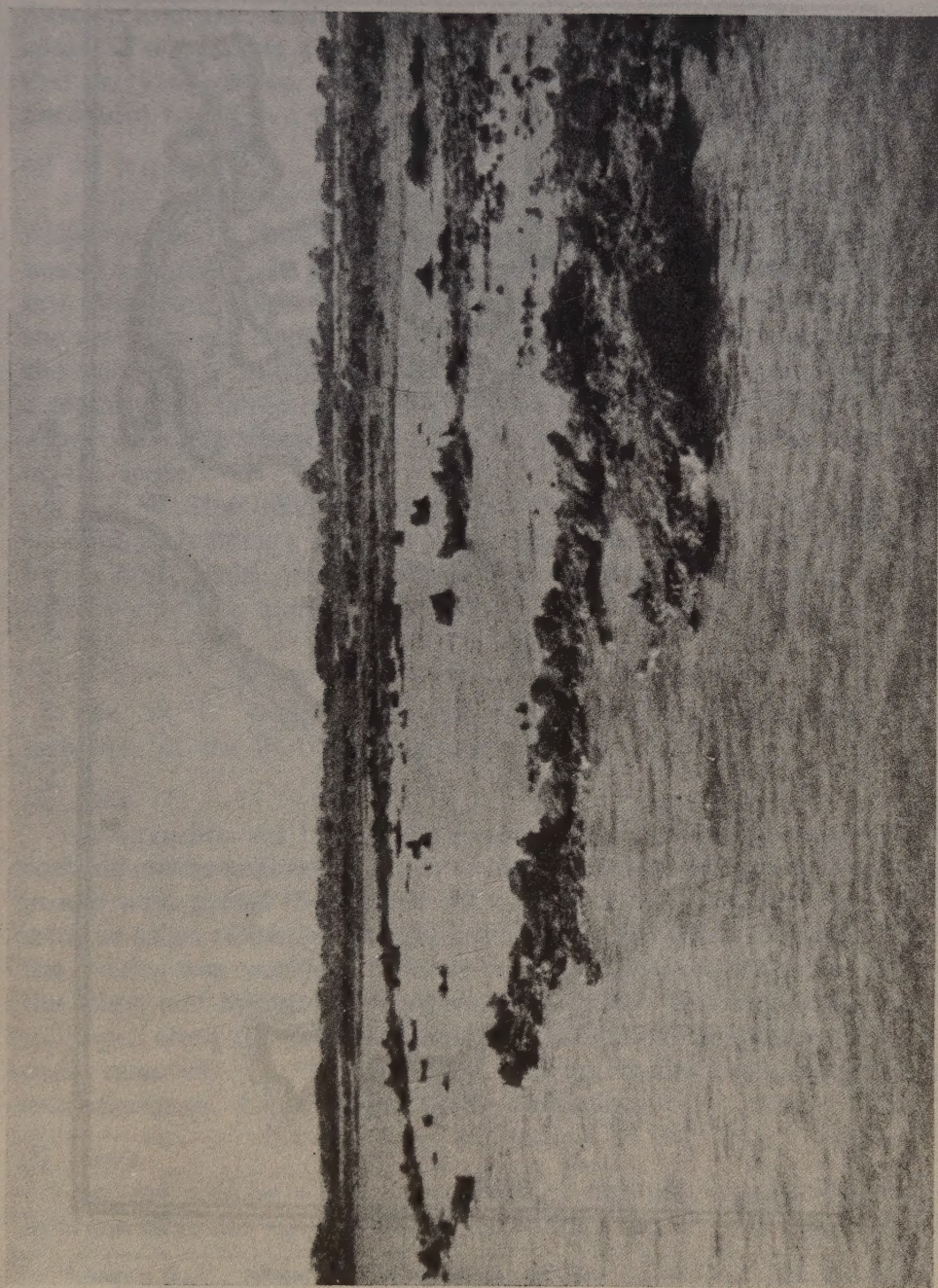
SPEARING.**(a) In Daylight.**

The method of catching fish by spearing was as follows. On the fish being sighted from the top of the cliffs by an observer, every available man in camp, armed with his spear, followed the school. Their movements were

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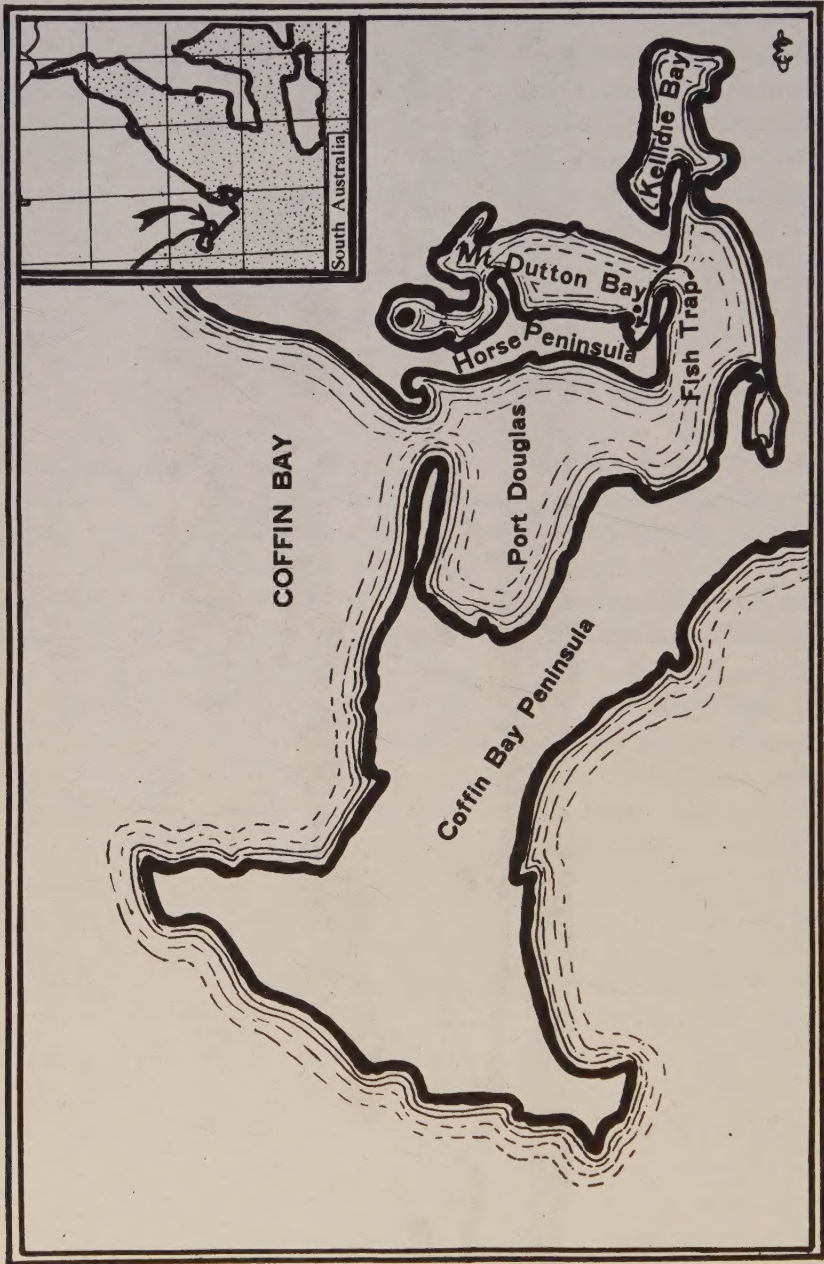
[PLATE U.



Fish Trap in Mt. Dutton Bay.

Photo.—W. G. Morgan.

ABORIGINAL METHODS OF FISHING AND COOKING.



Map showing location of Fish Trap.

directed from the lookout. The fish were transfixed with a pointed wooden spear, or one having a single barb consisting of the toe-nail of a kangaroo tied on with sinews. During the season when the butterfish (*Sciaena antarctica*) frequented the coast, such drives were of common occurrence.

(b) *At Night.*

When writing of the natives of the Parnkalla tribe, near Pt. Lincoln, Angas¹ states: "They hunt fish in shoal water, all going in companies, with bushes in their hands, and trying to get outside of the fish, which they drive into the beach by throwing them up with the bushes. At the mouth of the creeks, weirs of brushwood were constructed to catch the fish left by the receding tide. They frequently go fishing at night, each man carrying a torch, which is replenished by a bunch of inflammable wood. The light attracts the fish, which, as they rise, are struck with the *wadna* (boomerang) or the spear."

Mr. W. Steer told the author that the natives at Streaky Bay caught their fish by building a large fire on the edge of the water. The fish, attracted by the light, would swim toward it, only to be killed by the waiting aborigines with boomerangs, and in more recent times with pieces of hoop iron.

METHOD OF COOKING FISH AND ANIMALS.

Mr. W. G. Morgan gave the following description of the cooking technique of the Pt. Lincoln aborigines.

(a) *Fish.*

A large fire was built and allowed to burn down until only a bed of coal and ashes remained. In this a hole was scraped, and the fish, uncleaned in any way, placed therein and fully covered. A green stick was pushed into the ashes at the head of the fish to allow the steam to escape. When the cooking was considered to have been sufficient, the fish was taken from the ashes, and broken backward across the gills. This caused the body to split open along the abdomen, and thus allowed the skin and entrails to be easily removed. By this method of cooking the flesh was kept clean and uncontaminated by the ashes of the camp fire.

(b) *Emus.*

In emu cooking a hole some fifteen to eighteen inches deep was dug. In this a large fire was lit and allowed to burn down. The coals and ashes

¹ Angas, G. F., *Savage Life in Australia and New Zealand*, L, 1847, p. 142.

were then raked out and the emu placed in the oven, feet upwards. The body of the bird was then covered with hot sand, coals and ashes, and allowed to remain in the oven for from three to four hours. As in the case of the fish, a green stick was pushed into the oven adjacent to the body.

(c) *Opossums.*

These animals were also buried in the ashes of the camp fire in a similar manner to that of the emu, and allowed to remain overnight. By the morning the animal would be well cooked.

C. P. MOUNTFORD.

Australia : Material Culture.

Towle.

Stone Arrangements and other Relics of the Aborigines Found on the Lower Macquarie River, N.S.W., at and near Mount Foster and Mount Harris.
By C. C. Towle, B.A.

In the year 1818 John Oxley, the explorer, travelled down the Macquarie River and discovered Mount Harris and Mount Forster (now known as Foster). In his *Journal*¹ he wrote of them : each is " from one and a half to two miles long by half a mile to one mile wide : their formation must be considered a most singular geological phenomenon, detached as they are from all mountainous ranges and rising from the midst of a soft alluvial soil. Small pieces of granite were in several places thrown into heaps as if by human means ; and their whole surfaces are covered with similar pieces, detached from the solid mass to which they once belonged . . . The natives appear numerous in these regions of apparent desolation."

After reading this passage which so aptly describes both Mount Harris and Mount Foster and their surroundings, I made enquiries of a resident² of that district as to whether any heaps of stones such as Oxley had referred to were still in existence. Soon afterwards he replied that he had located several such heaps on Mount Foster. Accompanied by Mr. F. D. McCarthy, of the Australian Museum, and Mr. G. A. Williams, both of whom are members of the Anthropological Society of New South Wales, I visited Mount Foster during June, 1938, and we found a series of stone arrangements on its highest part. Mr. Williams and I had previously been in the vicinity of Mount Foster to investigate a line of stones on a claypan. This line

¹ *Journals of Two Expeditions into the Interior of New South Wales, 1817-18 (1820), pp. 235-6.*

² Mr. G. J. Hall.

of stones is situated in Twenty Stone Paddock, about two and a half miles south of Mount Foster. In March, 1939, Mr. Williams and I made further and more extensive investigations of the area, including Mount Harris and Little Mount. (Fig. 1.)

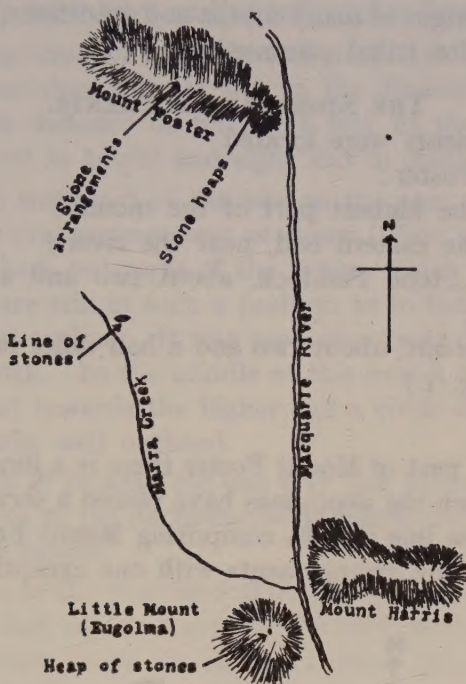


Fig. 1.—Locality sketch, showing the position of the stone arrangements.

Mount Harris, Mount Foster (the native name for which according to Sir T. L. Mitchell was Narrabon) and Little Mount (or Eugolma) are a series of old rock masses. Each rises in a line of hills above the surrounding alluvial plain which stretches beyond the horizon in every direction. Mount Harris and Mount Foster rise to a height of about two hundred feet. Little Mount covers a very much smaller area, and is about fifty feet in height. From the highest part of Mount Foster one may see the unbroken circle of the horizon. To the south-south-east Mount Harris and Little Mount are about five miles away on opposite sides of the river.

The rock which forms the three mounts is a quartz felspar porphyry (not a granite as Oxley stated). It has weathered considerably and its surface is very rough. Slabs of the surface rock, especially on Mount

Foster, stand upright on all sides. In that dry and hot climate the exfoliation of the rock surface has also been considerable.

The impression which these isolated rock-covered mounts made on the aborigines can only be surmised. Rising from a vast alluvial plain, they were no doubt the origin of many myths and traditions, and they would be appropriate places for tribal ceremonies.

THE STONE ARRANGEMENTS.

Stone arrangements were located

(a) at Mount Foster :

(i) on the highest part of the mount ;

(ii) at the eastern end, near the river ;

(b) in Twenty Stone Paddock, about two and a half miles to the southward ;

(c) on Little Mount, about two and a half miles further to the southward. (Fig. 1.)

Mount Foster.

On the highest part of Mount Foster there is a limited area of smooth rock surface on which the aborigines have placed a series of stone arrangements (Fig. 2). The line of hills comprising Mount Foster is east-west in direction and the stone arrangements with one exception are in the same direction.

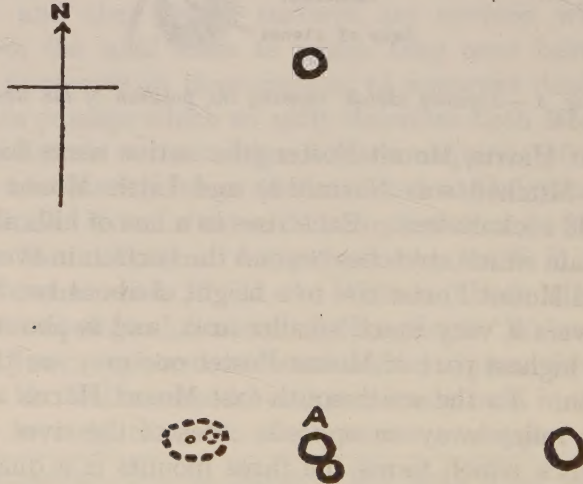


Fig. 2.—Sketch showing the relative positions of the arrangements on the highest part of Mt. Foster, "A" being the position of the pile on the apex.

On the apex of the mount there is a pile of stones nine feet in diameter and four and a half feet in height (Plate W, *a*). From it the mount falls rapidly on all sides. It has been built up of slabs of rock laid down horizontally. Some of the slabs are more than two feet in length and six inches in thickness. This pile was probably higher at one time. Many of the stones around its base have undoubtedly fallen from it.

A heap of stones one foot in height and six feet in diameter is adjacent to this pile on its south-south-east side in the direction of Mount Harris (Plate W, *a*). At a distance of forty-five feet to the eastward there is another heap two feet in height and eight feet in diameter (Plate W, *b*).

Ten feet to the westward of the pile on the apex there was probably at one time a small oval arrangement of stones (Plate W, *c*). Nowadays it is very much disturbed, but some of the stones, which had originally been placed end to end, are still in such a position as to indicate with sufficient clearness the original outline. It was probably about eleven feet in length and nine feet in width. In the middle of this oval a few stones had been heaped together, and towards the higher end a circle of stones two feet in diameter is still fairly well outlined.

Two more heaps of stones—the one fifty feet further to the westward, the other seventy feet to the northward—complete the stone arrangements on this part of the mount.

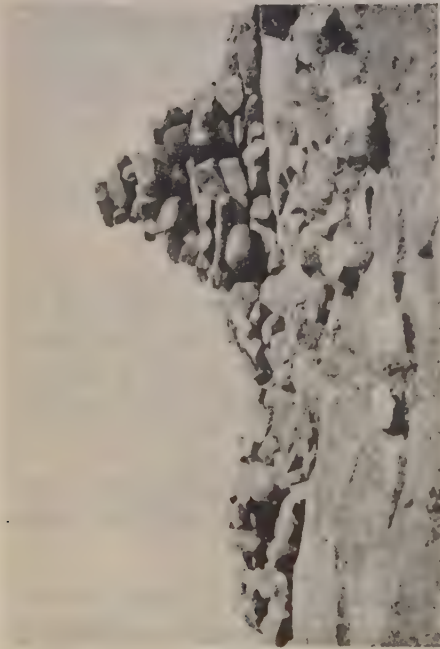
A short distance to the westward of the pile on the apex, large numbers of stones cover several square yards of the rock surface. They seem to have been placed there ready for use as occasion required. They do not form a heap, but in places they are two and three deep. Several stone implements were found amongst these stones.

The stone arrangements on the top of Mount Foster, therefore, cover a distance from east to west of one hundred and forty feet. The pile of stones on the apex and the oval arrangement seem to have been constructed with some degree of care; the remainder are jumbled heaps of stones. Similar heaps, connected with ceremonial arrangements, have been observed in several parts of Australia.³

In the making of this series of arrangements the aborigines gathered many hundreds of stones, some of the largest of which measure more than two feet in length, one foot in width and one foot in depth.

As I have stated, Mount Foster is a line of hills. The extreme eastern end runs down almost to the banks of the Macquarie River. On the

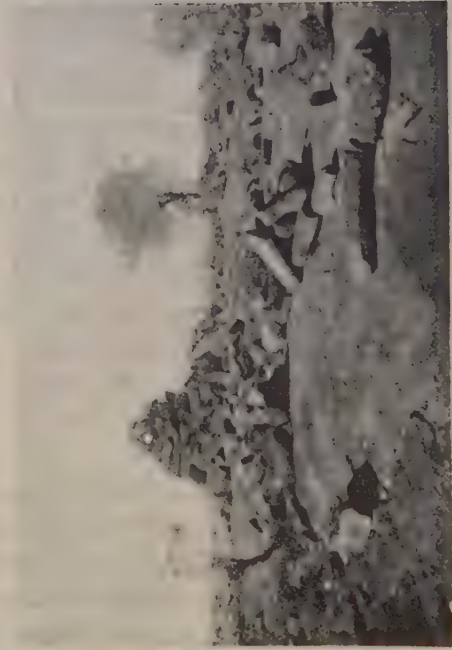
³ See appended bibliography.



A



B



C



D

- a. The pile of stones on the apex of Mt. Foster and the heap adjacent to it.
- b. The heap of stones at the eastern end of the arrangements on Mt. Foster.
- c. The pile on the apex in the background; part of the oval arrangement in the foreground.
- d. The line of stones in Twenty Stone Paddock. (View taken in 1937.)

western side of the small hill nearest the river there is a pile of stones ten feet in diameter and two feet in height. It is situated at the foot of the hill on the side of a wide, shallow valley. Around the foot of the same hill in the direction of the river there are several heaps and clusters of stones which have been placed there by man. They are in a badly disturbed condition. They lie around the margin of a wide, flat area which extends to the river. Along the side of the same hill there are the remains of the camp fires of the aborigines, and an abundance of stone implements.

The distance of this place from the arrangements on the top of the mount is about one mile.

Twenty Stone Paddock.

About two and a half miles south of Mount Foster, in a property known as Twenty Stone Paddock, there is a line of twenty-one stones (Plate W, d). Originally there were twenty stones, but I was reliably informed that one of them has been broken into two since the time of their discovery. Some of these stones are one foot or more in diameter, and when Mr. Williams and I visited them in 1937, they formed an irregular line running east-west for a distance of forty feet. They were undoubtedly carried to the claypan from Mount Foster or Little Mount, from the foot of which to the claypan there is no outcrop of rock.

The claypan on which the stones are lying is near a reedy swamp which drains into Marra Creek. Mount Harris, about four miles to the south-east, is hidden behind the trees, but the line of hills forming Mount Foster stands out clearly for its full length. As they lie on the bare surface of the plain, the stones even now arrest one's attention, although their purpose is not known.

Were they carried there for ceremonial purposes connected in some manner with the arrangements on Mount Foster and on Little Mount, or for utilitarian purposes?

If they were carried there for utilitarian purposes there is evidence that the aborigines used the claypan as a camping place. On its surface, there are heaps of burnt clay—remains of the cooking processes which they had carried on. Seed-grinding stones have been collected there, and an examination of the twenty-one stones shows that innumerable flakes have been removed from their surfaces. These flakes are lying around the stones; and although the material is so intractable, some of the flakes show evidence of having been used.

On the other hand, there does not appear to be any reason why the line of stones should not have been connected in some way with the arrangements on Mount Foster and Little Mount. If the aborigines had required only a supply of flakes, they could have obtained them at one of the mounts without undergoing the labour of transporting so many heavy stones.

As to the relative position of the stones on the claypan at the advent of the white man, there is no record. If they have always had a general east-west direction, they would not only be parallel to Mount Foster, but also to the stone arrangements on its highest part. Nearly all the chippings on the claypan surround the stones—a circumstance which suggests that the stones were in an east-west direction at the time of the aborigines. However, as they have been interfered with in more recent times, their present position has no necessary relationship with their original position.

Little Mount.

Situated about two and a half miles further to the southwards is Little Mount or Eugolma. From it there is a clear view of Mount Foster, five miles to the northward, and of Mount Harris near by on the opposite side of the river. On the highest part of the hill, there is a heap of stones similar to those at Mount Foster. I regret to state that in very recent times it has been partly demolished. In its undisturbed condition it was probably eight feet in diameter and two feet in height.

No stone heaps or other arrangements were located by me on Mount Harris.

The Purpose of the Arrangements.

The purpose of these arrangements which are spread over a distance of five miles on the western side of the river cannot now be ascertained. I have no doubt, however, that they were connected with ceremonial practices of some kind in which aborigines from a distance probably participated. An old resident of the district, Mr. C. R. Warman, has always understood that the stones in Twenty Stone Paddock, which he first saw in 1877, were the meeting place of the Bogan River and the Macquarie River peoples. There is a local tradition that the mounts were ceremonial places of the aborigines.

THE STONE IMPLEMENTS.

Mount Foster, Mount Harris and Little Mount were used extensively as quarries for material for stone axes. Separated by long distances from

other surface outcrops, they provided supplies of stone for the surrounding country. Ground-edge axes of material obtained from this locality have been found more than fifty miles away in several different localities. They have, for instance, been found as far distant as Dubbo, which is one hundred miles away. They have also been found at Narromine (75 miles) and along the Bogan River. There seems to be little doubt that the trade in stone was an extensive one. Oxley mentions that the aborigines in this locality were numerous. As the owners of the quarries, they were in a most advantageous position, since the tribes in the surrounding country would probably have to barter other articles for the stone they required. Axes obtained from this locality would possess more than ordinary significance for their owners, and they would serve as constant reminders of the ceremonies connected with the sacred site from which they came.

All the stone implements found on Mount Foster, Mount Harris and Little Mount were of the local rock (quartz felspar porphyry). They range from well-shaped and chipped implements to roughly shaped and massive implements. Some heavy pieces of stone were found which apparently had been used for breaking up the mass into suitable sizes for implement making. The larger implements generally were shaped only at the working end on both surfaces of the stone—a flaked axe type. A few large implements of the scraper type were found which had been flaked on one surface only.

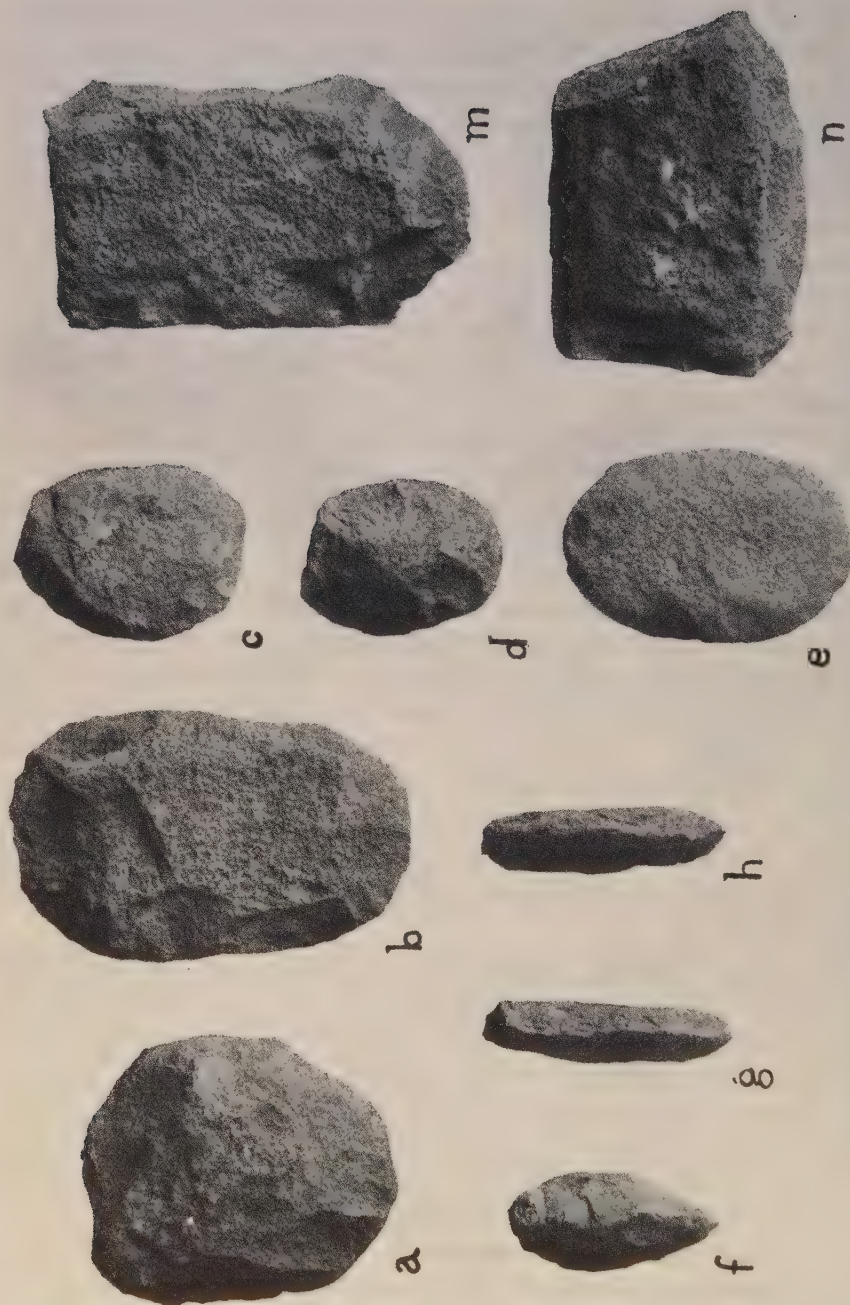
The axes may be classified as follows :

(a) Of the larger and less finished implements flaked only at the working edge, there are two kinds, the one with the working edge along the side of the stone, the other with the working edge at the end of the stone (Plate X, *m*, *n*).

(b) The more finished implements are generally oval in form (Plate X, *a-h*). Their average length is approximately five inches, but they vary from three to eight inches. The entire surface of most of these implements has been flaked and the periphery carefully chipped (Plate X, *f*, *g*, *h*). Many of them were subsequently treated by grinding along the working edge (Plate X, *e*). Even the most symmetrical of them, however, bear evidence of the intractability of the stone from which they have been made. More than half of the implements collected by me were broken.

The few flakes found on the mounts were probably broken off in the course of axe-making. Some of them show signs of subsequent use. Spherical hammer stones which had been used extensively were also found.

STONE ARRANGEMENTS OF THE ABORIGINES.



a-d. Well-finished flaked axes.
 e. Well-finished flaked axe ground at the cutting edge.
 f-h. Side view of flaked axes, showing well-chipped periphery.
 m-n. Axes flaked along the working edge only on both surfaces of the stone.
 Size: approx. $\frac{1}{3}$ actual.

From Lower Macquarie River. (Reproduced

by courtesy of the Australian Museum.)

No ground-edge axes were collected by me during the investigations, but many have been collected by others in the vicinity of the mounts.

Implements of the kinds found on the three mounts are also found on the surrounding plains, where, in addition, grinding stones of sandstone and a few flakes of quartzite and other materials are found.

The grinding stones do not appear to have been very plentiful as the stone had to be brought a long distance. They are similar to those found throughout western New South Wales, but on the average they are much smaller in size. Small whetstones and a few hammer stones of imported materials are also found on the plains.

Concerning the flakework, the local rock supplied nearly every need of the aborigines. Flakes of this material are all crude in form. Some of them show evidence of use, but the greater number cannot be differentiated into used and unused. Flakes of imported quartzite and other materials were found in comparatively small numbers only after a search had been made on the camping grounds near Marra Creek. Some of them are well shaped and chipped. All the flakes which I collected may be classified as knives and scrapers.

CONCLUSION.

The area under survey is one of the most interesting which has been located in New South Wales in recent years. The masses of rock outcropping on such an extensive alluvial plain and the consequent bartering of stone throughout the surrounding country, would make Mount Foster, Mount Harris and Little Mount well-known centres. But the aborigines would not be content merely to barter the stone: they would endeavour to give a satisfactory account as to how and why the mounts appeared on the plain at all. And, as the stone arrangements signify, they would go thither to participate in the ceremonies which, we may be sure, had been instituted by their mythological ancestors.

ACKNOWLEDGMENTS.

I wish to thank Mr. F. D. McCarthy, of the Department of Anthropology, Australian Museum, Sydney, for his kind assistance, not only with this paper, but also with the bibliography of stone arrangements in Australia, which follows. I wish also to thank Mr. Geoffrey A. Williams for his untiring assistance in the field, and Mr. and Mrs. G. J. Hall, late of Twenty Stone, now living at Chalk Farm, London, England, for so kindly assisting me in the year 1937 to locate the arrangements.

C. C. TOWLE, B.A.

Australia : Archæology.**Dow.**

Rock Carvings and Ceremonial Mounds, Noonthorungee Ranges, Koonawarra, N.S.W. By Edmund B. Dow.

The West Darling district of New South Wales is gradually yielding up its treasures of aboriginal interest, and the rugged hills and gullies of the Barrier, Mootwingee and Noonthorungee Ranges are proving to be rich in examples of native art and stone culture.

As early as 1860, when the Victorian Exploring Expedition, under the leadership of Burke and Wills, made their memorable journey through this country, they passed through the Mootwingee Ranges, and in their scanty notes they mentioned the "gloomy gullies" and rocky water holes that are to be found in many parts of these hills. Several of the more easily accessible of these water holes became favourite camping places during subsequent years, but with the advent of the pastoralist and the fencing of the holdings, some were cut off from the traveller, and new tracks were established, leaving these gullies in their original beauty and isolation.

The Burke and Wills track from Menindee northwards has long since fallen into disuse, except for a stretch through a valley in the Mootwingee Hills. This pass later became the mail route to White Cliffs in the busy days of opal mining, but now, where once the rocky hills resounded to the hoof-beats of the horses of Cobb & Co., the motor-car hums through with its mails and supplies for the outback stations.

In this pass the Nootumbulla Creek, or Rock Hole Creek, was noted by Wills in his journal, as a place of permanent water; Ernest Giles made it one of his camping places between 1861 and 1863; and later on an hotel was built there for the refreshment of coach travellers. Running water was supplied to the hotel from the rock holes about a mile up the creek, and there one finds the aboriginal carvings that have made the name of Mootwingee famous throughout the scientific world. Although the hotel is now deserted and fast falling to ruin, the Rock Hole Creek still attracts many visitors, not only on account of its value as a native art gallery, but also because of its bold and rugged scenic grandeur. It is only 90 miles from Broken Hill, and is a favourite picnic spot. In one of the nearby caves, where stencilled hand markings are found, an over-zealous land agent from Katoomba has desecrated the place with his horrible advertisement, despite the fact that this area has been proclaimed a "Reserve for the Preservation of Native Carvings".

If these and similar works are to be preserved for posterity, the Government must be urged to proclaim them national monuments, with the appointment of a ranger, so that suitable and severe punishment may be meted out to vandals; otherwise these wonderful and historic picture galleries will be damaged and disfigured beyond recall.

Although this is the only group of rock carvings known in this particular locality, there are wind eroded caves in almost every gully in the Mootwingee Hills in which can be seen stencilled hand markings, and further to the south, at about six miles, at a place called The Ramparts, there is a group of ceremonial mounds, which I have described elsewhere.¹

To the north of the Mootwingee Ranges, at about 18 miles, there is a line of low hills, known as the Noonthorungee Range, running from S.W. to N.E. Burke and Wills passed the S.W. termination of this range and journeyed along its western side, but now the mail track turns to the N.E. from Mootwingee and leaves the hills to the west, and being left in splendid isolation, these rugged hills and their secrets are known only to the pastoralist and the occasional musterer.

Rumours of the existence of interesting native relics in these hills, on Koonawarra holding, led the writer to explore the south-western end of the range in August, 1938, and a rich reward was forthcoming.

The rock formation is somewhat similar to the Mootwingee series, and although the hills are not as high, the weathering processes have been similar. The bare rock surfaces provide a good and rapid run-off after rain, and the hills are dissected by steep, rocky gullies, while in exposed positions the cliff faces have been wind-eroded into caves or rock shelters, and these have provided suitable conditions for the native craftsmen. Rocky holes in the creek beds hold water for long periods after rain. They provided a camping place where water was available for man, and for the birds and animals which provided him with food.

KOONAWARRA CLIFF SHELTER.

A large cave in sandstone at the foot of a 40-foot cliff face shows several good examples of native art. Emu tracks in yellow ochre have been painted on the lower part of the walls, while in another place the actual foot of an emu has been stencilled on the rock. In this example the background is red, and the foot is surrounded by white pigment. A boomerang and a lizard are depicted by the same method, and this is the

¹ Aboriginal Ceremonial Cairns near Broken Hill. *Oceania*, September, 1938.

first time in this district that a stencilled emu foot has been recorded. Quite a number of stencilled hands are also to be seen, and in addition there are hand impressions made by dipping the hand in red ochre and pressing it on the surface of the rock. These are not good impressions, as too much ochre has been used, and there is considerable smudging between the fingers. They occur high up on the roof of the shelter, out of reach of an ordinary man, and the artist must have needed assistance to reach the position they occupy. This again is the first recorded example of "impressed" hands found in this district.

In this cave a very fine axe was found. It has evidently been made from a water-worn stone of suitable shape, with one end ground to form the cutting edge. It is $6\frac{1}{2}$ inches long, 4 inches broad, and $2\frac{1}{4}$ inches through the thickest part. The heel of the axe has been left in its natural state, but the lower half has been smoothed and dressed, and then ground to provide the cutting edge. When found, it was highly patinated, probably by oxidization, except on the blade, where the original green colour of the stone was still visible. The pebble is of dolerite or an allied species but its composition is difficult to determine without breaking a fresh surface. It is a stranger to the Barrier and Noonthorungee Ranges but may have come originally from the country to the east, where several types of igneous rocks occur.

ROCK CARVINGS.

About a mile to the west of the cave, a rocky creek cuts its way through the range and disgorges on to the plains, ultimately joining Noonthorungee Creek, which flows westward towards Bancannia Lake. It must be remembered, of course, that a creek, in this district, is really a watercourse which only runs after rain, with water lodging in holes for various periods, depending on season, temperature, and the number of sheep that use it for a watering place. Such is the creek under notice, and near the foot of the hills there are several rock holes in its bed, with an eroded cave close by and almost at creek level. This showed slight evidence of paintings, but these were very faint owing to the exposed position of the cave, but on the floor were several rough grinding stones, proving that the cave was at one time a camping place.

On the rocks above and around about the rock holes were quite a number of carvings, strongly patinated, and looking very old. There are several "cartwheel" designs (Fig. 1). This type has also been observed

ROCK CARVINGS AND CEREMONIAL MOUNDS.



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

at Sturt's Meadows.² Another design, shown in Fig. 2, is 18 inches long, and the cross bar is 12 inches long. There are many paintings, but most of them are so old and weathered as to be almost indecipherable.

CEREMONIAL MOUNDS.

The most interesting occurrence at this spot, however, is the group of ceremonial mounds shown in the sketch plan (Fig. 5). The largest of these (Fig. 3) is on the crest of a low ridge, and is a prism-shaped heap of the dimensions shown, with its long axis on a bearing of N. 10° W. Down a gentle slope to the west are four more mounds of decreasing size, parallel to the main heap, but all are in a straight line. Calling the large mound No. 1, it was found that 2 and 3 (Fig. 4) were also of triangular section, but 4 and 5 are nearly circular in plan, No. 5 being a small heap of about twenty stones.

The eastern mound is off the line of the others, roughly circular in plan, and appears to be a spoil heap of stones collected from the track, which will be mentioned later. In another case in this district, viz. at the Mulga Springs occurrence, a similar heap was found, which seemed to be a spoil

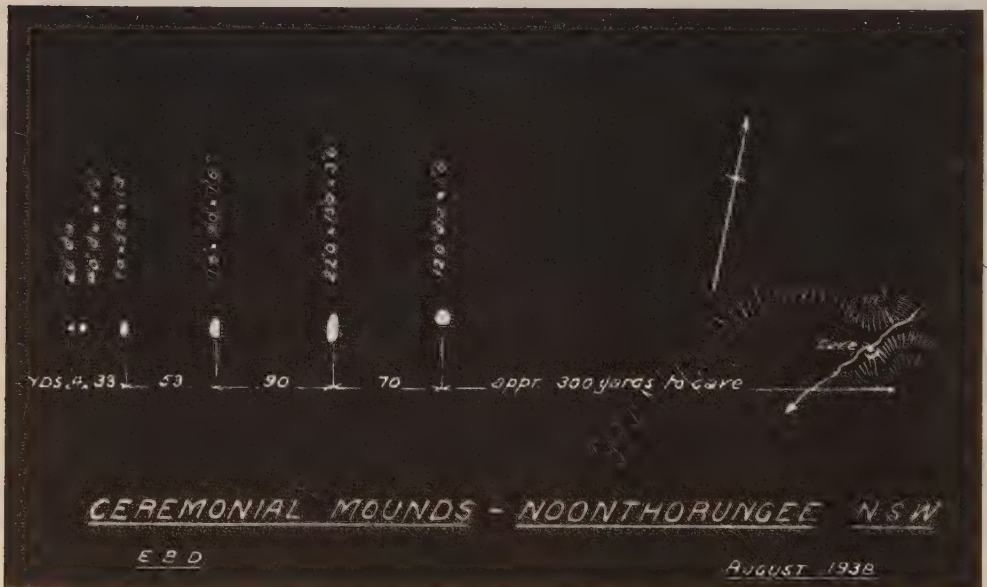


Fig. 5.

² Aboriginal Carvings. *Mankind*, August, 1938.

heap made up of stones collected when clearing a path leading to the main mound. This pad is still discernible, and there can be little doubt but that these heaps are waste dumps or spoil heaps.

In the Koonawarra example the rocky hills are clad with mulga, and there is evidence that at one time a track has been cleared of timber along the line of the mounds, and this is more noticeable when one stands on the largest heap and looks easterly towards the rock holes in the creek. A very definite line of clearing can be seen through the mulga scrub, and one is forced to the conclusion that this has been made intentionally.

Another interesting feature was observed at this spot. On the supposed track from the largest mound to the creek, and especially from the spoil heap to the foot of the hill, there is a great profusion of chippings and flakes, and places are seen where the actual operation of flaking has been carried out. The country rock itself is not of suitable material, but pebbles have been taken to this spot for the purpose, and scattered heaps of rejects around a focus can be noticed in several instances.

On the downhill side of the track many more flakes occur, as if the rejects have been thrown aside, and possibly some of them have been washed down by storms, but on the path itself they are in profusion. One wonders why this particular spot should have been chosen as a knife factory, unless the mounds were used for initiation ceremonies, requiring a large number of sharp flints at short notice. This might explain the great profusion, but the leaf-shape types also occur, in addition to the cutting-edge types.

Flakes have not been noticed near other mounds in this district, but in the light of this occurrence it will be as well to make further examinations, and if such knife factories were found in close proximity in other cases, it would support the idea that they were once used for ceremonial rites of this character.

CONCLUSION.

Other ceremonial mounds have been recorded from this district, and a comparison with these may be opportune.

At the Mulga Springs occurrence, on K Tank holding, there is a single mound 43 feet by 15 feet by 4 feet high, parallel to the crest of a ridge, with a definite path leading from it to the nearby creek. On the bank of the creek is a spoil heap of stones collected from this track, but no trace of carvings or paintings has been found in the immediate neighbourhood, although conditions appear very favourable.

At The Ramparts, on Waterbag holding, there are two large mounds about 25 feet by 10 feet by 3 feet high, and a third very small one, in the same line and at a distance equal to the distance between the two large ones. These mounds run across the crest of the high ridge on which they are built, and there is slight evidence that at one time the whole area has been surrounded by a ring of stones. No path has yet been observed, but in the contiguous gully there are a few paintings and carvings. A further examination of this site may yield better results in the light of knowledge gained at other places.

At Koonawarra we find five distinct mounds in addition to the spoil heap, with a defined path leading to the creek, and a plentiful distribution of chippings. The main mound is parallel to the crest of the ridge, the others being parallel, but on the downward slope of the hill to the west.

The magnetic bearing of the mounds at these places varies from N. 34° E. at Mulga Springs to N. 10° W. at Koonawarra, so that not much information can be deduced from their orientation.

No attempt is made to interpret the meaning of these occurrences except where it is suggested that a prolific distribution of sharp flints may point to an initiation ground.

As I have mentioned elsewhere, it appears that these mounds were built and used by a very early settlement along the Darling Basin, and that later tribes did not understand their symbolism, and if they used them at all it was not for the purpose for which they were originally constructed.

This does not complete the record of all occurrences in the West Darling district, as at least five other localities are known to the author where relics of some description have been reported. These include carvings, ceremonial mounds and stone designs, and it is hoped that such places will be visited when the opportunity comes.

EDMUND B. DOW.

Australia : Material Culture.

Towle.

A Bibliography of Stone Arrangements found in Australia. *By C. C. Towle, B.A.*

The following list contains references to stone arrangements which in one form or another are found in nearly all parts of the continent. We are fortunate that information concerning some of the arrangements in the northern parts of Australia has been obtained from the aborigines and placed on record. On the other hand, we do not possess authentic informa-

tion as to the purpose of a great number of the arrangements referred to in the list. Many of the arrangements have not been adequately recorded.

I have attempted to subdivide the literature for reference purposes. Many of the arrangements are not easily classifiable, and for that reason the subdivisions should not be interpreted too exclusively. In a few instances the subject dealt with is given in parentheses after the reference.

Many of the papers classified as B, C, D or E also contain brief discussions of the subject in general ; many classified as A give localities and other information.

I have not attempted to classify the arrangements (except the fish traps) according to the purpose, known or surmised, for which they were set up.

Reference
letter.

- A Discussion of the subject either generally or in certain of its aspects.
- B Stone walls built in rivers, estuaries, and other such places for the purpose of trapping fish.
- C Stones arranged in straight lines, circles, ovals, and other forms on the surface of the ground.
- D Stone piles, heaps, clusters, sometimes arranged in a series in straight lines and in other forms.
- E Stones standing upright ; and a few instances of other stones known to investigators in touch with the aborigines, although not strictly classifiable as stone arrangements.

References marked with an asterisk contain information gathered from the aborigines as to the significance of the arrangements.

C. C. TOWLE.

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PROCEEDINGS OF SOCIETIES : NEW SOUTH WALES :

The Boomerang. *Summary of a lecture delivered before the Society by Professor Harvey Sutton on 21st February, 1939.*

Professor Sutton indicated that, for almost thirty years, he had made a study of the Australian aboriginal boomerang—its history, its distribution, its various native names, its manufacture, the science of its flight, and actual usage.

Professor Sutton mentioned that the first accurately recorded description of the flight of a boomerang appears in the *Sydney Gazette* of 1803. Previously, however, in 1788, White had described it as "a humble form of scimitar." In 1822 it was referred to as a "boomerang or woodah." The name boomerang was said to have been used by the Port Jackson natives.

Drawing attention to the structure of the boomerang, Professor Sutton said that the returning types are usually flat on one side and rounded on the other. The bevel along the edges was not essential, but was of assistance in flight. The cross section of the returning type was similar to that of the wing of a bird or an aeroplane. Indeed the boomerang was to be regarded as a form of gyroplane, or gyroscope. The angle of its bent shape usually varied from 60 to 120 degrees. Right-angled ones were also made. In explaining the aerodynamics of the boomerang, Professor Sutton stated that its shape followed the principle that a stick had to be curved or bent in order to produce a continuity of spin. The most important feature in the returning boomerang is the twist. The greater the twist, the smaller the circle of flight described, and *vice versa*. It is the gyratory principle in a boomerang which allows it to spin forward, circle round, and then return.

In the returning boomerang, there must be a definite proportion of weight as compared with size and shape. The natural tendency for a boomerang to warp, or change its twist, will affect its flight. In many cases, so fine were the differences in physical appearance it was impossible to judge returning from non-returning boomerangs. An actual trial flight was the only specific test of type.

In making a boomerang, the native craftsman selects timber with a natural bend, such as the "elbow" of a tree branch, or of a surface root. Professor Sutton's favourite boomerang is one he made himself out of a red vulcanite material. The lecturer advanced the theory that the pattern of grooving worked on to the very old, stone-cut boomerangs of the natives has much the same effect on their flight as the grooved moulding on a modern golf ball. Some boomerangs were made purposely to produce a whistling or whirring noise in flight.

In all his thirty years' experience, the Professor has only seen one boomerang which could make a flight both clockwise and anti-clockwise. It was said to have been made by a native who had spent part of his life in a lunatic asylum, where, it is suggested, he may have gone into the study of higher mathematics!

When throwing the boomerang the aboriginal holds it upright, not flat, with one end facing forward. The returning kind fly best in windless conditions, or with only a light wind blowing. In all, the boomerang is "temperamental." The making of boomerangs by natives is a real craft, the secrets of which are handed down from father to son. It is also a very individual craft, whereby each boomerang (from the viewpoint of the natives themselves)

carries the "stamp" of its original maker, even though it might be hundreds of miles from its point of origin. Returning boomerangs are to be found in use in most parts of Australia, excepting Central Australia and Cape York Peninsula.

The heavy non-returning boomerang when used as a weapon of war is a dangerous object, often being thrown forward for a hundred or more yards, ricocheting off the ground with a "googly" effect similar to a spinning cricket ball, and striking upwards at its target.

The Life and Secret Ritual of Aboriginal Women in the Kimberleys. *Summary of a lecture delivered before the Society by Dr. P. Kaberry on 21st March, 1939.*

Recent research has shown the need for a revision of our ideas about the position of women in Aboriginal society. Formerly the woman was stigmatized as a slave and a drudge, but the work of the lecturer and that of others has established the fact that in the economic sphere there is little hardship in collecting vegetable foods and smaller game; that there is little monotony, and that she expects and receives co-operation from her husband in the provision of daily meals. In marriage, her rights and duties are clearly defined, and they are asserted with the sanction of the community. So that, although she is excluded from some of the more spectacular ceremonies of the men, she is not reduced to a status of inferiority or subordination in profane affairs, apart from choice of residence, political organization and warfare.

Some writers have declared that the women have little or no religion, that they represent the profane element in society. But in North-West Australia they know the myths, they have the same totems as the men, and when old they perform increase ceremonies for natural species and possess an illicit knowledge of the churinga or bullroarers. Moreover, they have their own secret rites centring around the development of puberty, intocision, menstruation and childbirth. These are just as sacred as those of the men, though less spectacular.

Within recent years the women have adopted from the Northern Territory and from Central Australia secret corroborees devoted to love magic. They are never seen by the men; they involve the observance of taboos and a set procedure, decoration, singing, dancing and the use of magical objects. They provide opportunities for display and recreation, and are rapidly spreading across the Kimberleys.

The Extinct Anthropoid Apes and the Origin of the Human Dentition. *Summary of a lecture delivered before the Society by Dr. W. K. Gregory, Curator of Comparative and Human Anatomy, and of Living and Fossil Fishes at the American Museum of Natural History, New York, and Professor of Palæontology at Columbia University, on 4th April, 1939.*

A description was given of the teeth of various anthropoid apes, and of fossil types recently discovered in Africa. Their relationships with human dentition were discussed. The several theories of the development of the human dentition, including that brought forward by the late Professor Henry Fairfield Osborn and supported by Professor Gregory, were dealt with in detail. A vote of thanks was moved by Professor J. L. Shellshear, which was seconded by Dr. A. A. Abbie. The lecture was illustrated with lantern slides.

The Arts and Crafts of India. *Summary of a lecture delivered before the Society by Shrimati Komalam, M.A., on 18th April, 1939.*

The lecturer dealt with the work of the Rabindranath Tagore School, a college established for the purpose of re-awakening interest in the ancient arts and crafts of India. She described the murals in old temples, the techniques of making beautiful cloths, the development of the architectural style of the Hindus, and many other interesting phases of the highly developed artistic life of the Indian people. A general description was given of the racial and cultural groups in India, and of their social and economic life. The lecture was illustrated with lantern slides and an exhibit of specimens.

Ancient Ships. *Summary of a lecture delivered before the Society by Mr. T. H. Silk, M.I.C.A., M.I.N.A., M.I.E., on 16th May, 1939.*

The annals of ship-building were badly kept until quite recent times. Drawings and paintings are inaccurate, with the exception of Egyptian drawings. A floating tree trunk probably gave man his first ideas about ships. Many beautiful specimens of canoes formed of shaped tree trunks have been found in various parts of the world. The earliest maritime peoples thrived probably prior to 10,000 B.C. There are carvings and drawings of ships in Egyptian tombs, which illustrate the transport of the granite blocks for the tombs. The oldest known boats date back to 5,000-6,000 B.C. The lecturer described the first oversea maritime expedition recorded in the world's history, and added a description of the vessels used in the Red Sea trade. He then referred to Pharaoh Necho and his attempt to build a canal between the Mediterranean and the Red Sea and the circumnavigation of Africa by the Phoenicians. He gave Herodotus' account (484-423 B.C.) of the Nile boats of his day, and the method of navigation of the river. He referred to the excavations at Dashur by J. de Morgan and the description of the vessels found there.

The Phoenicians were the first of the races on the Mediterranean seaboard to cultivate a sea-borne commerce. The lecturer told of ship-building in ancient Greece and Rome, where conditions were favourable for both navigation and building. However, these people contributed very little to the development of the ship. The earliest Greek naval expedition was to the siege of Troy, 1237 B.C. The Athenians were expert tacticians at sea. Mr. Silk emphasized the decline of sea power after the Romans had completed the conquest of the nations bordering the Mediterranean.

He next described some ancient merchant ships. Vessels of widely different sizes were in use. He then described the Greek galleys and gave details of their structure.

SOUTH AUSTRALIA :

"Pituri." *Summary of a lecture delivered before the Society by Professor T. Harvey Johnston on 28th November, 1938.*

The lecturer stated that he had collected other references to the use of this narcotic during the last five years which were additional to those which he had presented at a former meeting.

He first projected on a screen photographs of the plant *Duboisia Hopwoodii*, and also of a woven bag in which pituri was carried, usually in the armpit of the aborigines.

The word pituri was one of many in currency and particularly belonged to a small tribe inhabiting the region between the Northern Territory and the border of Queensland, where the boundary cuts the tropic of Capricorn.

Several references to this plant were given from the diaries of Burke and Wills written in 1861, and of Howitt in 1861 and 1863. As early as 1817, Cunningham drew attention to a kind of tobacco used by the natives. Helms, Roth, Spencer and Gillen gave copious references to the plant, and in recent years Mrs. Daisy Bates made reference to it at Ooldea.

Great credit was due to the Bancroft family for their investigation of the plant in relation to tropical medicines used in Australia.

Various species of plants had been discovered with narcotic properties but the real pituri was found growing in sandhill regions or where the sandhills merge into the Simpson Desert.

Several species were named, and the localities in which these were found ranged from the borders of Queensland across to Western Australia, in which State it was known as emu or camel poison. The method of preparation of pituri was described and the greater narcotic effect of the real pituri was emphasized when compared with other species chewed by aborigines. Roth located a tribe which used the name pituri and also located trade routes along which this plant was distributed for a distance of 500 miles.

Professor Gregory made a study of these routes and stated that a system of barter had been established in which pituri was used as currency.

Howitt stated that pituri had been traced as far as the Barrier Ranges and probably the same route was followed from the pituri country.

Thus, in early days, a system of exchange and barter had been established, and various authorities had plotted the routes by tracing pituri from Queensland to central Australia, where this was exchanged for ochre and stone slabs.

There evidently had been a large trading centre established, and it is probable that fairly large bodies of men passed along the trade routes, for the carriers of pituri served as ambassadors in inter-tribal law and were given inter-tribal protection.

Rock Engravings at Panaramitee. *Summary of a lecture delivered before the Society by Mr. C. P. Mountford on February 27th, 1939.*

Mr. Mountford first showed a map of South Australia on which seventy groups of rock carvings were plotted. He then described the most extensive group which was located in the Salt Creek Paddock, approximately twelve miles south of Yunta. This group was situated in an area where rock engravings were numerous.

About fifteen groups of carvings had been discovered within twenty miles of this locality, all of which were engraved on hard rock outcrops.

When examining the carvings for the first time, he formed the opinion that a sharp-pointed stone had been used as a chisel and a heavy stone as a hammer, but in the light of further investigations considers that a single stone only was used. He could not form an estimate of the age of the engravings, but as the present-day aborigines knew nothing about them, the lecturer considered that most of the work had been performed by an earlier civilization. Some examples were very ancient and hard to discern, due to the weathering of the rock surface, and were only visible when light was directed from the correct angle.

Several interesting slides were projected depicting various engravings which extended over the floor of a valley about three and a half miles long. These, the lecturer classified as the "Barred Oval", "Witchety Grub", "Kangaroo Tracks" and "Lizard" designs.

The numerous photographs were described in detail, and some excellent designs were noted, particularly those of the kangaroo tracks and various lizards.

During the discussion which ensued Mr. Mountford suggested that some effort should be made to protect these engravings from vandals, and it was agreed that a deputation should approach the Premier with a request to have this area proclaimed as a national reserve.

The Dravidians. *Summary of a lecture delivered before the Society by Rev. N. H. Lowmyck on 27th March, 1939.*

The causes of migration by primitive man were first outlined and parallels drawn to the conditions obtaining in more recent years, and although transportation at present presented few difficulties, in prehistoric times migration or infiltration was slow and extended over great periods of time.

Primitive man was essentially a nomad, seeking localities where food was abundant for his family or group. Climatic conditions were a great factor in dispersals, desert places such as the Gobi, Sahara and central Australia, which were once fertile, were now practically abandoned. Another factor which influenced migration was the increase in population, and when difficulty in obtaining food was experienced, some of the population was forced further abroad.

Some of these migrants would change their religion or superstitions and adopt those of the new land, others retained most of their legends and superstitions which were adopted by the inhabitants of the new land. In Egypt, the Sumerians introduced new ideas, and when they returned to Sumeria carried back some Egyptian customs.

The Nubians also entered Egypt in early times and brought with them their gods from Nubia.

The Libyans were an aggressive people, and entered Egypt probably about 6,000 B.C. and left their traces, and the Hyksos introduced the chariot into Egypt. With the interchange of customs and ideas there was possibly something in common between Egyptians, Dravidians and Australoids, for the boomerang was known to all.

Totemism and animism were also common to all, and included Sumerians and Babylonians. All had sacred animals, and Egypt particularly had gods with human bodies and animal and birds' heads. The Dravidians probably originated in Libya and migrated through Mesopotamia and thence to India via the Gobi Desert, through Baluchistan, and settled in the Indus Valley and were later driven by Aryan invasion, some to the north, others south across to Burma, and some to Ceylon, where they became known as Veddas.

These people were quite a civilized group when the Aryans, a Semitic group, entered the Indus Valley.

The Badarian was probably the oldest civilization known to exist, probably about 10,000 B.C., and at that time wheat and barley were cultivated and animals domesticated.

This civilization spread to Egypt and through Sumeria to India. Some of the migrating types intermarried, but Aryans did not intermarry with the Dravidians. The caste system

at present prevents marriage with other castes, and this may have originated in very early days and may account for the Dravidian retaining many of his physical features for ages.

The negroid element probably entered India as slaves, and were probably carried there by Egyptians or Sumerians. North of the Indus are some people of Dravidian type with flat noses, deep eye-sockets and square jaws, bearing a remarkable resemblance to the Australian aborigine. Some of the Dravidians probably passed from India to Burma by boats, others by land journey, but the lecturer was not prepared to venture an opinion how they reached Australia.

The Evolution of Designs in Papuan Art. *Summary of a lecture delivered before the Society by Mr. R. M. Berndt on March 27th, 1939.*

The lecturer traced the gradual evolution of the human figure-headed spatula carved by the inhabitants of portions of New Guinea and the Archipelago.

In all instances the human figure was used as a base, the designs were incised, and usually filled with lime; the figure-head had the hands supporting the chin, the body being in a squat or haunched position. The more ancient spatulae showed better carving than those of later years, in fact some of the more recent had very little design in carving.

The usual decoration on the spatula was the development of the human figure gradually evolving into conventional designs, where legs may or may not be present, the arms and posture somewhat varied, probably reflecting the individuality of the artist.

Several drawings were projected on a screen depicting various types of spatulae, all showing the hands under the chin, the body haunched, some quite realistic, others of conventional design carried out in scroll work; the type of scroll varying, but gradually evolved from what the lecturer described as the "fish-hook" pattern. No satisfactory explanation was given to account for the meaning of the natural squat or crouched position, and Mr. Berndt considered that the particular scroll work used may have been inspired by the contour of the limbs, and pointed out how this contour could quite easily be converted into the conventional scroll.

Man's Diminishing Jaws. *Summary of a lecture delivered before the Society by Dr. P. R. Begg on May 1st, 1939.*

Dr. Begg first traced the evolution of dentition in the ascending order, starting from the fishes and showing the gradual evolution through amphibians, marsupials, arboreal monkeys, chimpanzee, Tasmanian aborigine, to present day civilization. Photographs of skulls were projected in the same order to early, intermediate, and present day types of mankind, indicating the increase in brain capacity with a corresponding decrease in the size of jaws.

These evolutionary changes were brought about by heredity, time, and environment, and the variation of types by mutation.

Prior to arboreal existence there is little indication of changes in the jaw, although there are gradual differentiations in the position and types of teeth. When, however, the forelegs were used for grasping and examining, and as an aid to eating, changes were comparatively rapid. These actions usurped the first functions of the teeth, and the size of the brain increased with corresponding diminution of the jaw, and the changes were more pronounced as the animals became tree-dwellers.

Deformity in the jaws of later civilization is not so pronounced in primitive types, and several photographs screened of Australian aborigines showed no deformities and teeth almost perfect. Some photographs of later types, particularly of Tasmanians, showed crowding of the teeth due to reduction in the jaw bones, the lower incisors being very crowded, but without signs of decay. These deformities, however, may have been due to inherited tendencies from one parent with large teeth and the other with a small jaw. Other photographs of present day types showed the lower jaw too far back and the upper jaw too far forward, and others again with the lower jaw too small for the teeth.

British people seemed more afflicted with the retreating lower jaw ; about 30% of the population examined showed this defect, which may be due to natural selection, and as against this, the examination of Australian aborigines revealed about 10% with this defect.

In some of the Tasmanian skulls examined there was insufficient room for wisdom teeth, and these remained impacted, but these again may have been hereditary types.

Defects were now more noticeable, and it is difficult to find an individual entirely free from some defect. In spite of this, the lecturer considered the small lower jaw would survive, due to natural selection, for the protruding lower jaw is not regarded favourably.

Skulls of aborigines and whites were exhibited and attention drawn to the wearing down of the aborigines' teeth. This even wearing down of teeth was essential for the development of dentition, and while probably excessive in the aborigine, in white races this function was usurped through the use of soft prepared foods, resulting in abnormally small wear. Specimens of aborigines' jaws revealed that the chewing surfaces of teeth were worn half away, and at about the age of 35 to 40 years the crowns were quite worn down, due to vigorous chewing and the admixture of grit in the food. Soft foods were responsible for tooth decay, the teeth were not entirely cleansed of the soft material, which in fermenting liberated acids which attacked the enamel. Massage of the gums by the hard rough foods of the aborigine also accounts for the freedom from pyorrhoea, so prevalent in white races.

Various authorities were quoted and their opinions cited on the future evolution of mankind due to defects in the teeth, reduction in jaw bones, and other portions of the body. Some considered that the gradual decay and disappearance of teeth would cause the ultimate extinction of the race, for jaws would probably degenerate and teeth disappear.

Dental Conditions of Aborigines Compared with Civilized Groups. *Summary of a lecture delivered before the Society by Dr. T. D. Campbell on May 1st, 1939.*

Dr. Campbell's address followed that of Dr. P. R. Begg, who had spoken on the facial changes and the reduction of jaw and teeth, together with malformation in some primitive men and present types. Dr. Campbell proposed to deal with the food of aborigines, its preparation and effect on dentition. The examination of a large number of aborigines revealed striking dental features, a low frequency of dental caries, teeth very much worn, and few of those diseases of the gums which afflict white people.

The aborigine had a great diversity of foods which included fluids, plants, cereals, fish, and flesh, and others consisting of eggs, honey, insects, moths and grubs. Some of the food is prepared by heat treatment. Boiling is practically unknown, and not used in central Australia, for there the natives had no vessels to withstand fire. Most of the food is baked, but occasionally roasted. In baking flesh, the skin of the animal is left intact and sometimes

the fur is singed off prior to baking. Usually the viscera are not removed and the skin becomes the cooking vessel, leaving the fluids intact within this vessel. The flesh is cooked soon after killing, and is usually underdone, and a large amount of grit and ashes is incorporated with the food due to the method of cooking. Most of the food is hard and tough, pounded seeds are very rough, and the chewing of bones with the addition of grit is hard on teeth.

The nutrition value must be high in food prepared in this primitive fashion, for in the baked flesh none of the essential vitamins or chemicals is lost as is the case with boiled flesh and vegetables. Carbohydrates are not high in most of the foods, and as these are energy producing, it may be that the apparent laziness of the aborigine is one method of conserving energy and is a biological necessity. No detailed data are available concerning the vitamins in the food, but the aborigine must have all the vitamins required with the large variety of foods consumed; and as sunlight is abundant, the value of vitamin D is greatly enhanced, but the food values do not have a tendency to build up fats.

The next point considered was the effect of the foods on the teeth, the most striking feature being the even wearing down of the teeth, which strangely enough should be the normal condition. Caries were caused in the initial stage by the destruction of the enamel by acids. Stagnating food around the teeth is largely responsible for this condition.

The food consumed by the aborigine, being crude and hard, wears the teeth down evenly; the rough food cleanses them, and the action of both prevents lodgment of particles between the teeth, and the even wearing of the teeth is a very important factor in the prevention of caries.

In civilized people the incidence of caries is about 90%, being more prevalent in children and not so pronounced in adults unless they suffer from pyorrhœa. In aboriginal children examined there were no caries, and tooth decay was more prevalent in advanced age.

The conditions stated were largely a matter of food, and study of the aborigine throws some light on the factors causing tooth decay.

The modern refined foods of civilization are undoubtedly the cause of most of the trouble. Roughness is essential for the massage of the gums and for cleaning teeth. It is considered by some authorities that the lack of vitamin D is an important factor in tooth decay, and modern foods lack this vitamin. The study of aboriginal teeth tends to upset this theory, for we can assume that vitamin D is present in the primitive type of food. Vitamin D affects the structure of the tooth but does not affect the early attack of caries, and it is interesting to note that aborigines' teeth decay rapidly when using modern foodstuffs.

The acidity of mouth fluids is responsible also for the intensity of the attack of caries, but this aspect has not been studied in the aborigine, and as caries are absent in children and more prevalent in adults, it may be that the acidity of the mouth fluids changes with age.

Music and Ethnology. *Summary of a lecture delivered before the Society by Mr. Clement A. Harris on May 29th, 1939.*

In introducing his subject, Mr. Harris based his remarks on the examination of records and numerous types of musical instruments in the S.A. Museum. Music had played an important part in all phases of humanity, and was generally the hand-maiden of religion.

In early times, dancing was conducted with rhythm only, but later music was added. Music had various effects on the emotions ; it sometimes acted as a stimulant and sometimes as a sedative. Its effects were now being studied in connection with mental diseases.

The early Greeks regarded music as integral with education, and it had been stated that the most apt pupils were those with a knowledge of music.

The lecturer spoke of various trade songs, such as were sung in mediæval times in England by the shoemaker, fishmonger, etc. The shoemakers' song alluded mainly to the tools of his trade, and, due to his lack of knowledge of reading and writing, the tools and their uses were memorized in song.

A brief outline of music was given, the lecturer generally referring to time, tone and impressions. He stated that it was difficult to appraise the musical ability of people ; some had a good idea of tune and not of pitch, while others did not consider rhythm was altogether essential.

Mr. Harris proceeded to give examples of native peoples and their inclination for music, and found it difficult to place them categorically, some being better versed in pitch, others in tune.

Several musical instruments were examined in the Museum, some of which were used by savage tribes. Some of the percussion instruments did not produce a musical note, others gave one note only. It was most difficult to make toned instruments, and one could not judge these races by the quality of their musical instruments.

Several drawings and photographs of musical instruments were projected on the screen, the first being a priest's harp from early Egypt. This instrument had several strings, and indicated that the early Egyptians were highly cultivated in music. Another Egyptian fresco showed stringed instruments and a few wind instruments. The next showed a Javanese band, consisting mostly of percussion instruments of various sizes giving different notes. A series of early Greek instruments were screened consisting of two reed instruments, one string and two percussion ; these probably originated in Egypt. Although much earlier than the Javanese instruments, these were of a very much higher standard.

Another picture showed a Javanese playing a stringed instrument with a bow. This instrument originated from the hunter's bow, the earliest type having one string only. Ceylon is credited with the introduction of the bow about 5,000 B.C. The early Chinese had bow, wind, and stringed instruments.

A Chinese orchestra showed eight players with four reed instruments, one drum and one percussion instrument.

Two photographs of instruments used in Africa showed very ingenious types. One had eight pieces of thin metal of various lengths mounted on a sounding board and played like a Jew's-harp. The other was like a lute with four or five strings, the instrument being provided with keys for tuning.

Various types of instruments used by the lower grades of civilization were described. Four peoples had no musical instruments, namely the Tierra-del-Fuegians, the aborigines of Tasmania, the Ainu of Japan, and the Veddas of Ceylon.

The Tasmanians used a skin roll padded with fur, upon which they beat out rhythms. This produced only dull thuds, and can hardly be called a musical instrument. Capt. Cook, however, had stated that he heard these natives singing in harmony.

It has been stated that the Veddas were amongst the lowest types of civilization, yet these people have a scale of five or six notes and a remarkable system of rhythm. From thirty-three records taken from songs of the Veddas, however, only two notes were used, with a large variety of rhythm.

Australian aborigines are poor in rhythm, and generally use two pieces of wood for beating time in dancing ; but in song they are quite different, using five or six notes and occasionally touching an octave. Tierra-del-Fuegians use one note with three lengths, and usually inflect a note. In a Brazilian song of triumph only three notes are used. Early Egypt was credited with having four notes only, and before the building of the first pyramid added three more and made the octave. The Greeks obtained these notes from the Egyptians and called them the seven Sacred Sounds ; thus from the Greeks came the system of octaves.

Other nations showed some advance on primitive types, and five-note scales were used in China and India. Many of the ancient Scottish melodies were set in five notes. The pan-pipes of the Maori were made with two rows of pipes, and could play an octave and make a chord of three notes.

Some nations are credited with having a high sensitivity for pitch. Arabs and Maoris have twenty-four notes to an octave, which is hard to explain, but is generally known as an inharmonic scale. The lecturer doubted whether the ordinary ear was acute enough to distinguish anything between half-tones, but evidently the Arabs, the Maori and the Chinese could appreciate such tones.

Members' Night. *Summary of lectures delivered before the Society by Miss A. Harvey, Dr. T. D. Campbell, Mr. C. P. Mountford, Mr. R. M. Berndt, Dr. F. Fenner and Mr. N. B. Tindale on July 3rd, 1939.*

The President announced that the business of this meeting would take the form of a series of short addresses on various subjects, a time limit being placed on each. He first called upon Miss Alison Harvey for her address on " Pearl Shell Ornaments ". Two types of shells were exhibited—pearl and bailer, decorated and plain.

These shells were widely distributed through Australia, and had ceremonial uses by the aborigines. The pearl shell was most abundant in the vicinity of King's Sound and was found in isolated cases as far south as the Great Australian Bight. The bailer shell predominated near Cape York Peninsula, was distributed through Queensland, and found occasionally as far away as the North Flinders Range. These were distributed by trade along the Birdsville and Canning routes to the Dieri tribe. Near the coast these shells were used mostly for ornamentation, but further from the source of supply they possessed magical significance. Attention was drawn to the various types of shell and the decorations which, to the Dieri tribe in particular, were not utilitarian but of magical value.

Dr. Campbell was next called upon to deliver a short paper on " Teeth ". He said that the South Australian Museum probably contained the largest collection of aboriginal skulls in the world, and provided a large amount of material of dental interest. From this wonderful collection there was much to be gathered in studying dentition.

Several years ago he had published a work on teeth and jaws and was still engaged in research work.

Two skulls were exhibited, showing the wonderful and perfect dentition with an extreme amount of wear, the crowns being almost obliterated, but the owners had evidently suffered no ill effects. Australian aborigines and Esquimaux were alike in this respect and had the best dentition of any races existent. Another skull exhibited was obtained from amongst human remains found in the shelter at Devon Downs. This was of an infant probably about eighteen months old with very striking dentition. These temporary teeth were more simian in character than other teeth in humans and would be the object of further investigation.

Photographs of deciduous teeth of young orang-outang in juxtaposition with those of white children were shown for comparison, and the teeth in the skull exhibited were noticeable for the simian characteristics.

The Australian aborigine is of a very primitive type, and his physical make-up is nearest to that type from which modern races have evolved, and many of the physical characteristics of primitive man are found in modern aborigines.

In reply to a question the President stated that the infant's skull was found in the 21-ft. level at Devon Downs, but it was hard to estimate the time when this deposit was laid down. It was during the period when the Tasmanian devil was still living in South Australia, for bones of this animal were found at the same level.

"Aboriginal Music" was the subject of Mr. Mountford's short talk.

Several gramophone records had been procured from time to time during various expeditions to the Flinders Ranges, but it would require an expert musician to discuss the musical content.

It was interesting to note that the singers preferred to sing the songs of tribes adjacent to their own, and it was extremely difficult and sometimes impossible to persuade them to sing their own tribal or individual songs.

Mr. Mountford then broadcast six songs taken from different tribes, mainly from the Aranda and Dieri tribes, and drew attention to the rhythm which varied in each song, boomerangs being used to beat the time. The last record was the circumcision ceremonial song. It was well known to all the tribe, and most men could sing it.

Mr. R. M. Berndt spoke next on "New Guinea Arrows". He selected about twenty types of New Guinea arrows and traced the evolution of arrow-head design from the pure conical type to the almost triangular. Another type represents a conventionalized crocodile, the barbs being the scales of the reptile.

One arrow in particular closely resembled the Larriki type of northern Australia, although it had been obtained from the northern coast of New Guinea. All of these types of arrow-heads had been carved from hard wood, and none was poisoned. Others exhibited had broad bamboo blades and were used in warfare or in the slaughter of pigs.

The arrows were not notched, as the bow string consisted of flat woven fibres of bamboo, the flat end of the arrow being adapted for this use.

Melanesians used the notched arrow, the bow string being of twisted fibres, and in neither was the shaft feathered.

Dr. F. Fenner's subject was "Skulls". He said there were about 850 to 900 aboriginal skulls in the Museum, and members were invited to see some of the exhibits in the shelves and boxes. These had all been classified. A large amount of work of great interest has been undertaken in the study of the brain by anthropologists, for as man had reached eminence

through his brain capacity, the study of the skull has thrown light upon the development of the brain.

Other features of interest were to be found in the types of face, development of the chin and eyebrow ridges.

Dr. Fenner exhibited a cast of the Cohuna skull, of which very little had been published, and drew attention to its salient features.

The Itapi fossil of portion of a skull was also exhibited, together with an endocranial cast which the lecturer compared with that of the Australian aborigine.

The various instruments used in the measurement of skulls were also on exhibition.

The final speaker was Mr. N. B. Tindale.

Mr. Tindale stated that during the last fourteen months Mr. Birdsell and he, together with their wives, had traversed approximately 16,000 miles, and had obtained very interesting results, and probably Mr. Birdsell would give some idea of these results at the next meeting.

They had examined approximately 1,200 half-castes and about the same number of full bloods, their investigations ranging from Cairns to S.W. Australia. Altogether they had examined individuals of 175 tribes.

Natives of the southern half were very scarce and they had sometimes travelled many miles to see one individual, the only survivor of a once numerous race.

Anthropology would be all the poorer if these were not studied in the near future, and he expressed the hope that the Society would make an early endeavour to investigate the fragments of a race which was fast disappearing.

VICTORIA :

The Impact of our Civilization on that of the primitive Australian Aboriginal. *Summary of a lecture delivered before the Society by Mr. E. J. B. Foxcroft on August 3rd, 1938.*

The lecturer dealt particularly with the causes of the rapid decline in numbers of the aborigines. He indicated that the native had developed an intelligent adaptation to a different cultural environment and that, although primitive, he was not uncultured. Owing to the disturbance of territorial arrangements, destruction of native food supplies and detribalization inevitable with white settlement, a psychological effect was produced, resulting in loss of confidence, loss of desire to live, the breakdown of tribal cohesion and consequent inevitable racial decline.

Vegetable Foods of the Australian Aborigines. *Summary of a lecture delivered before the Society by Mr. G. N. Hyam on September 14th, 1938.*

The lecturer developed his theme upon the axiomatic basis that the whole of a primitive culture is based upon hunger and sex. As the Australians are essentially nomadic, with no knowledge of food storage or cultivation, it is not surprising that, throughout the continent, anything edible and not actually poisonous was eaten. As regards foods, the Australians must be regarded as the world's greatest experimenters. At the same time, it is noticeable that, except in times of great scarcity, the mixed diet of the aborigines provided a perfectly balanced ration—with the main shortage probably that of water.

In Queensland alone over 240 varieties of vegetable foods have been recorded, in Western Australia over 200, and in Victoria over 200—yet every list is known to be extremely incomplete. Although no vegetable food was ever taboo, in some cases "close seasons" were observed—probably the nearest approach to a primitive agriculture.

Of interest to comparative ethnologists is the close similarity between certain ritual dances of the Grass Seed totem of the natives of the Barrow Creek district and the ancient Grecian Dance of Ceres.

The lecturer concluded by stressing the necessity for further research—such investigations, indeed, might prove of actual economic value, as the full and balanced, normal aboriginal diet indicates the great food value of numerous Australian plants and seeds.

Studies in Black and White in Central Australia. *Summary of a lecture delivered before the Society by Mr. R. H. Croll on October 26th, 1938.*

There was an attendance of over 150 on this occasion, so the lecturer wisely confined his remarks to a wide discussion of the native problems, etc., at present exercising the minds of anthropologists and others, and to a general account of Central Australia. Told in a racy and witty style, this held the attention of both members and visitors.

The Art of Albert Nanitjira. *Summary of a lecture delivered before the Society by Mr. R. Battarbee on November 30th, 1938.*

The lecturer, after describing the remarkable artistic history of Albert Nanitjira, a full-blooded Arunta of Hermannsburg who, in four or five years since first contact with white artistic standards, has developed a technique in advance even of his teachers.

A display of water colours by Albert (portion of those later exhibited very successfully in Melbourne) caused a sensation among members, who were unanimous as to the exceptional ability of this native genius.

The Torres Islands. *Summary of a lecture delivered before the Society by Capt. C. Mansbridge on March 29th, 1939.*

This was a racy account of a tour through these islands. The outstanding differences between the Torres Islanders and the mainland aborigines were stressed, with emphasis upon their exceptional intellect. At the conclusion of this address Mr. S. R. Mitchell read an illustrated paper by Mr. R. H. Goddard, dealing with the carvings of the aboriginal native woman, Kalboori Youngi, of the Diamantina tribe.

The Icelanders—Colonizers of Greenland and Discoverers of America. *Summary of a lecture delivered before the Society by Prof. A. Lodewyckx on May 31st, 1939.*

After describing the early history of Iceland in the middle of the tenth century, the lecturer quoted from early sagas to show that there were really historical documents of great value to students.

The first settlement of Greenland was that of 985-6 by Eric the Red, and the lecturer traced the subsequent history of the two (East and West) settlements then established. He also showed many illustrations of ruins traceable to these settlements, together with evidence of racial characteristics and social customs.

The lecturer then described the explorations of Leif Ericsson (1003-1011), with its discovery of Vinland (now identified as close to Boston, Mass.).

Although subsequent parties of Icelanders visited the same place, some spending lengthy periods there, no permanent settlement was made.

Anthropological Papers. *Summary of three papers read before the Society by Mr. D. A. Casey, Mr. A. S. Kenyon and Mr. D. J. Mahony on June 28th, 1939.*

The title of Mr. Casey's paper was "Prehistoric Cultural Remains from New Guinea" and it was illustrated by a display of actual specimens and photographs of items forming part of a prehistoric culture in New Guinea. The whole points to a fairly elaborate and diffuse culture, with definite associations with another country. The whole subject is still in its infancy and requires much investigation.

Mr. Kenyon spoke about the "Aborigines of S.W. Australia". He read a paper by Jas. Brown from the "Nautical Magazine and Naval Chronicle" dealing with the writer's experiences with the natives around Albany in 1835.

The speaker compared this account with fundamentally identical early accounts from Victoria, New South Wales and elsewhere.

Mr. D. J. Mahony discussed the "Hairless Aborigines" of the Balonne River, Queensland. He gave a humorous recapitulation of the history of the accounts of this hairless tribe in western Queensland (1858-62) and the eventual proof that this hairlessness was purely a characteristic of a single native family of half a dozen members!

Sixth Annual Report of the Anthropological Society of Victoria, 1938-39. *Summary of the report delivered at the annual meeting of the Society on June 28th, 1939.*

The year 1938-39 has been one of considerable progress in the activities of the Society, and it is therefore to be regretted that there has not been equal progress in membership, which has remained practically stationary at approximately 140. A considerable increase is desired, and members are requested to introduce as many friends as possible.

The committee regret to report the loss by death during the year of four members, one of whom, Mr. Charles Croll, had been auditor to the Society since its inception. Mr. A. C. Frostick has been appointed to the vacant position.

The financial position of the Society is satisfactory, but in view of heavy additional obligations entered into, particular attention will have to be paid to finance in future. Members are asked to co-operate by prompt payment of all dues.

Meetings. Seven meetings were held during the past year, being one fewer than the previous year. Owing to exceptionally hot weather during the summer and equally inclement, cold weather during the winter, the meetings were not as fully attended as could be desired. It is hoped that meetings during the ensuing year will be much better attended.

Summaries of the lectures given will be found in this issue of MANKIND.

At various meetings, displays of native implements, etc., have been given, contributed to by Messrs. Mitchell, Smith, Ferguson, Coleman, Balfour, Kenyon, and others. To all these, and to all lecturers, the Committee tenders its thanks.

During the year the Australian Anthropological Association was formed, and this Society duly adopted its constitution and joined the Association. It is hoped that this move will prove of great benefit to Australian anthropology.

In conjunction with other similar bodies, the Society took an active part in persuading the Commonwealth Government to adopt a new policy towards aboriginal affairs. The "New Deal" policy was adopted early this year, following discussions with representatives of the Society. Every confidence is expressed in the hope that the new policy will meet with considerable success.

The Society participated actively in the Canberra Congress of the Australian and N.Z. Association for the Advancement of Science. Important discussions were held by Section F (Anthropology) on this occasion.

During the year the Society adopted MANKIND as its official organ, and completed arrangements for all future issues to be supplied gratis to all financial members. The Committee hopes that members will appreciate this move, and that, by contributions to its pages, they will assist the journal in the excellent work which it is doing.

The Committee is actively organizing an Anthropological Exhibition, to be held during the Melbourne Spring Carnival, from October 28th to November 18th. This will be conducted under the auspices of the Melbourne City Council, and already promises to be an outstanding success. The co-operation of members, both by exhibits of interesting material and by offers of assistance before and during the Exhibition, is earnestly requested.

It is hoped that this Exhibition will do much to interest the public in anthropology in general and in our Society in particular.

Offers of interstate co-operation already received are acknowledged with thanks.

Your Committee held ten meetings during the year. Messrs. Casey, Balfour and Lodewyckx had leave of absence during the period. The following attended: Messrs. Rosenblum and Smith, 10; Hyam, 9; S. R. and F. R. Mitchell, 8; Kenyon, 7; Croll, 6; Casey, Mahony and Balfour, 5; Lodewyckx, 2; Lamparter, nil.

In conclusion, your Committee thanks members for their interest during the past year, and appeals for even greater interest in the future—a future which they are confident is exceptionally promising for all the Society's activities.

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Original Documents from the Cuna Indians of San Blas, Panama. By Henry Wassen. *Ethnologiska Studier*, 6, pp. 1-178, Goteborg, 1938.

The author of this somewhat unique account of Central American native life is a Swedish archaeologist whose real aim in visiting South America was to investigate the prehistory of Colombia.

However, in an effort to complete the rich textual material gathered by the late Baron Enland Nordenskiöld in Panama in 1927, Mr. Wassen visited the isthmus in 1935 and there interviewed Nordenskiöld's two principal interpreters, Perez and Haya.

These two natives had been taught to write, and with the co-operation of several native chiefs they compiled a number of unique ethnological documents. These documents comprise examples of Cuna picture writing as well as ordinary script in Cuna, Spanish and English.

They have all been translated into English and provide illuminating original information concerning the mythology, religious ideas, medical practices and social organization of a little known Central American people.

The article is well illustrated with many photographs and several examples of drawings by Haya, one of the interpreters. These are reproduced in colour and show a remarkable sense of colour and imagination.

F. L. S. BELL.

CORRESPONDENCE, NOTES AND NEWS

Aboriginal Pictographic Art.

Two articles of interest to members have appeared in recent issues of the *Australian Museum Magazine* (Vol. VI, No. 12, Oct.-Dec., 1938, and Vol. VII, No. 1, Jan.-March, 1939). They are "The Aboriginal Rock Engravings of the Sydney District" and "Pictorial Composition in

Australian Aboriginal Pictographic Art," by our President, Mr. F. D. McCarthy. The author has briefly summarized the motifs embraced in these engravings, and has shown what an important record they form of the material culture, religious and totemic practices of the local aborigines. A great deal of misconception exists about these

rock engravings because of the numerous and unscientific statements made about them from time to time in newspapers, and it is with pleasure that we draw the attention of members to a reliable account of their nature and function in the life of the aborigines.

Rock Paintings in Widden Valley.

Miss E. M. Allan, a member of the New South Wales Society, has reported the existence of a small rock shelter about three miles up the Widden Valley from the main road through the Goulburn River Valley.

The shelter is about thirty feet above the road, which winds along the creek. On the back wall of the shelter, which is about twenty feet long, there are paintings of tomahawks, hands, a foot, and many straight vertical lines.

On the sandy floor of the shelter there are roughly chipped implements of basalt. The stone had evidently been obtained from the bed of the creek below. The roof and walls of the shelter have been blackened with smoke and the paintings are not now very clear.

Altitudes and Artefacts.

Sir,

The discovery of aboriginal artefacts in the neighbourhood of the upper waters of the Snowy River, N.S.W., gives rise to interesting speculation regarding the aboriginal occupation of these regions.

It is quite unlikely that there were any permanent aboriginal camps in this part of N.S.W., but undoubtedly regular visits were made by the aborigines to the higher altitudes during the summer months in order to hunt the marsupial and the various reptiles and birds that even to this day abound in these parts.

Whilst trout fishing this season, I located an old camp site on a natural clearing among the snow gums at Long Corner (4,500 ft. above sea level). I found some interesting specimens made from a dull white quartzite rock. Two specimens of diabase pebbles, shaped into ground axes, were also collected. These latter pieces had evidently been brought there during the summer sojourn, as the material is foreign to this locality.

Another member of our Society, Mr. A. E. Ivatt, on seeing the collection, stated that he had also found a ground basalt axe at Spencer's Creek (6,050 ft. above sea level) and it was his opinion that it had been dropped there by some visiting aboriginal hunter during the summer months, as no other artefacts were found in the vicinity. Altogether 80 artefacts, consisting of scrapers, points, crescents and a ground axe, were collected at Long Corner within a space of ten square yards.

R. H. GODDARD.

In Gratitude.

The Council of the Anthropological Society of New South Wales is most grateful to those members who forwarded donations in response to the appeal for funds. The amount of £22 19s. 6d. has been forwarded. This amount, added to the amount of £10 received from the member who made the offer on condition that members should contribute a similar amount, benefits the working account of the Society, therefore, to the amount of £32 19s. 6d.

The Council desires to express sincere thanks to those members who contributed.

The result of this appeal will enable the Council to carry on the work of the Society with greater confidence in the future. It is hoped that the time is not far distant when the Council will be able to set aside certain sums each year in order to build up the financial resources of the Society.

